



LEVEL ONE EARTHWORKS REPORT

**Dawn Estate
Gibbs Stage 1**

OCTOBER 26 2023

Winslow Pty Ltd

Authored by: QUALTEST LABORATORY PTY LTD

REF: 4106



Qualtest Laboratory

Est. 1987

Ref: 4106
Job: 23-293
Author: J Fowler

26th October 2023

Winslow
1587 Ipswich Road
Rocklea QLD 4106

ATTENTION: **MR KIERAN HOY**
Email: kieranh@winslow.com.au
Cc: haydni@winslow.com.au

Dear Sir

RE: **LEVEL ONE EARTHWORKS REPORT
DAWN ESTATE GIBBS STAGE 1**

PROJECT: **DAWN STAGE GIBBS STAGE 1**

CLIENT: **CCA WINSLOW**

SUPERINTENDANT: **CALIBRE**

CONTRACTOR: **CCA WINSLOW**

Revision	Date	Author	Reviewer	Description
0	18/08/2023	J. Fowler	M. Morrison	Issued for Comments
A	21/08/2023	J. Fowler	M. Morrison	Issued for Comments
B	22/08/2023	J. Fowler	D. Alazigha	Issue to Client

Qualtest Laboratory Pty Ltd
2/40 Boyland Avenue
Coopers Plains QLD 4108
PO Box 733 Archerfield QLD 4108
(07) 3875 1898
qualtest@qualtestgeo.com
www.qualtestgeo.com
ABN 74 010 752 815

GEOTECHNICAL AND LABORATORY SERVICES

1.0 INTRODUCTION

1.1 General

This report presents results and documentation for the Level One Inspection and Testing of earthworks filling operations at Dawn Stage 1 Gibbs - Walloon (The Site).

Qualtest Laboratory Pty Ltd was commissioned by CCA Winslow (The Client) to provide Level 1 Earthworks Inspection and Testing services as defined in Section 8 of AS3798.

Filling operations covered by this report were constructed between 31st July to 16th August 2023.

The purpose of the Level 1 commission and this report, is to provide an opinion that the earthworks operations carried out by the Contractor have been carried out in accordance with AS3798, relevant project specifications and Local Authority requirements as appropriate.

This report has been carried out in general accordance with the following:

- AS3798-2007 - Guidelines on Earthwork for Commercial and Residential Developments;
- AS1289 – Testing of Soils for Engineering Purposes;
- AS2870-2011 – Residential Slabs and Footings;
- Ipswich City Council Requirements; and
- Calibre Drawings and Notes on Drawings.

This report does not cover underground services, pavements, retaining walls, or any other works after the 16th of August, 2023.

1.2 The Development

The development comprises a 25 lot residential subdivision and associated infrastructure, including pavements, stormwater and sewer reticulation.

The earthworks at this site generally comprised:

- Filling Lots and part of Lots 774 – 781
- Filling Lots and part of Lots 785 - 799

Calibre Earthworks Plan Drawing no.1100 Rev. 2, Project Number 21-000461, indicates the approximate extent of earthworks filling to be constructed at The Site. These plans are a reasonable indication of the actual extent of the fill constructed during our involvement.

The extent of earthworks covered by this report is presented as a marked-up Calibre Earthworks Site Plan attached and as *Figure 1*.

A Lot Disclosure Plan should be requested from the developer to confirm the actual depth of fill at the site.

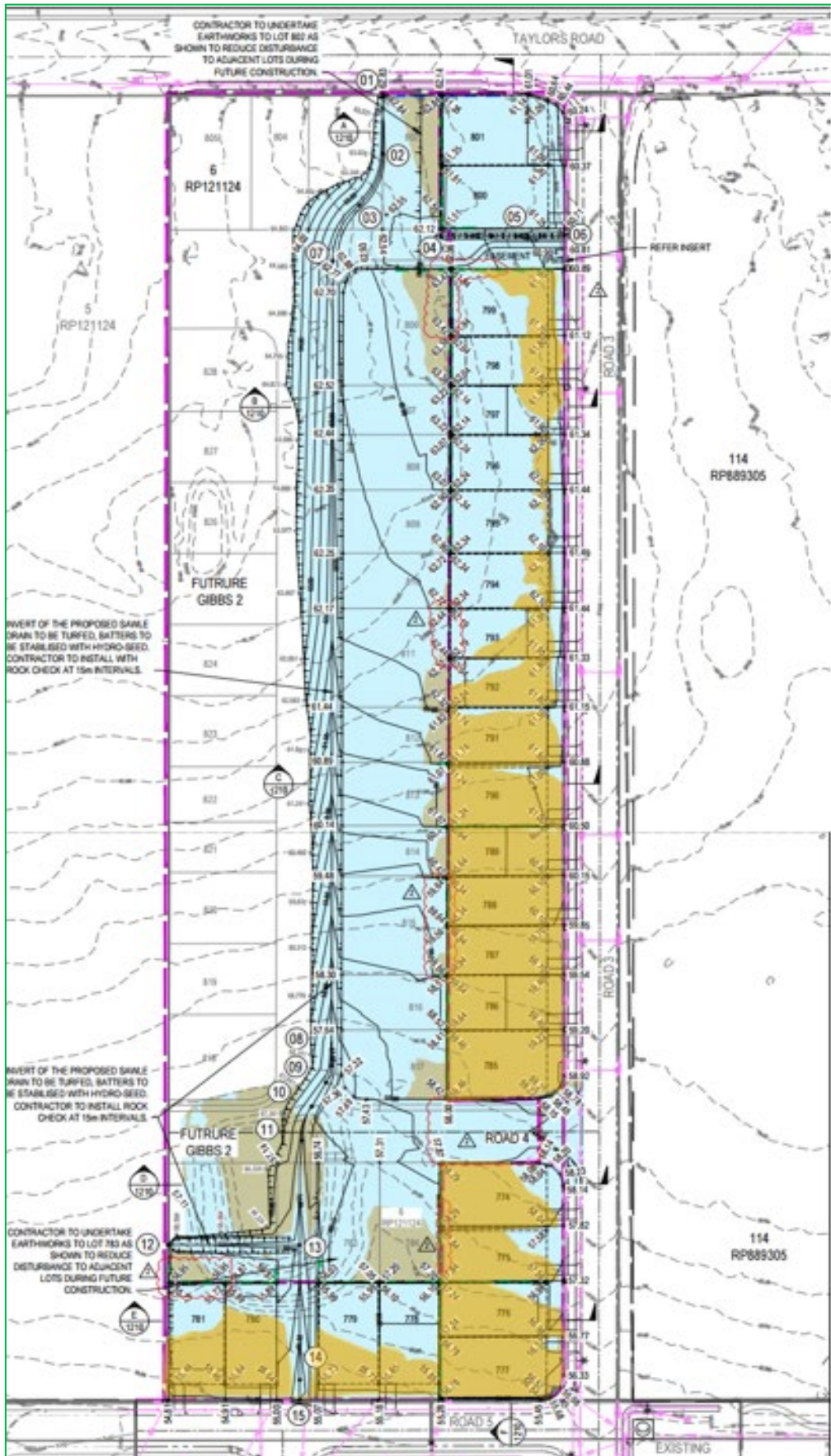


Figure 1: Extent of Fill Covered by This Report – Yellow Shade

2.0 WORKS AND SPECIFICATIONS

All filling operations at the site were placed and compacted in accordance with the following:

- AS3798 – Type 2 Earthworks Operations;
- Ipswich City Council Specifications;
- Notes on Calibre drawings; and
- Density Ratio – 95% Standard.

3.0 FILL FOUNDATION

Areas to be filled at the site were observed to be stripped of grass and topsoil to depths exposing competent natural ground.

Compliance of the fill foundation and approval to commence filling was on the basis of the following:

- Adequate removal of topsoil and organics.
- Compliant proof roll testing of the stripped surface using onsite heavy earthworks plant

A picture of the stripped surface is presented in *Figure 2*.



Picture 2: View of the Stripped Surface on Stage 1 Gibbs

4.0 FILLING OPERATIONS

Fill at the site was sourced from Stage 6B2-3 cut.

Materials used as fill can be broadly summarised as:

- Silty and Sandy Clay (CH), high plasticity, traces of fine to medium sand, grey-brown and moist

Fill was constructed using the following plant:

- Pad Foot Compactor
- Cat 815F Compactor
- Excavators
- Cat D6 Dozer
- Articulated Dump Trucks (Moxy)

Fill was observed to be placed in layers within the capacity of the above plants and compacted using several passes (at least 10 passes).

To the extent that was reasonably practicable, fill materials visibly containing excessive amounts of silts or deleterious materials such as sticks, oversize particles were sorted to remove the contaminants prior to placement or rejected for use. Some cobble-sized particles may remain in the body of the fill; however, are unlikely to be in sufficient quantities to adversely affect the performance of the new fill. Sloping areas requiring filling were benched and continually keyed into the slope prior to and during fill placement.

A picture of the filling operations is presented in *Figure 3*.



Figure 3: View of the Filling Operations on Stage 1 Gibbs

5.0 COMPACTION TESTING

Compaction testing was carried out on the compacted fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 and tested to AS1289 test methods. All test locations were selected by Qualtest at random and staggered over the fill area and depth. Test locations were not obtained by survey, and on this basis, the locations should be considered as approximate only.

Compaction testing achieved the minimum required compaction specification of 95% Standard at the test locations. Areas where the compaction specification was not achieved, were reworked and re-tested using random stratified location processes.

The location of the compaction tests and area of fill covered under this report are shown on the Site Plan contained in *Appendix A*.

Compaction test reports are contained in *Appendix B*.

6.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations during our engagement, including the stripped surface, new fill placement / compaction operations, and compaction testing.

As far as Qualtest could assess, the fill at The Site has been observed to be placed and compacted in accordance with the requirements outlined in Section 2.0 of this report.

The fill at The Site can be described as “Controlled” as defined in AS2870.

7.0 EXCLUSIONS

The compliance statement specifically excludes any topsoil, which may be placed for use as Lot dressing or any other subsequent earthworks after 16th August 2023. All trench backfill, landscaping fill and other fill placed without our knowledge is also excluded.

Assessments of batter stability, global stability, and material quality, such as soaked CBR and site classifications, are excluded from this commission. The stability of any fill batters in the long term must take account of the variable materials used for the construction of the fill platforms and all surface loads, including traffic loads near the crest of all batters.

Our onsite attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS.3798 - 2007, including soil or fill reactivity and soaked CBR values. We note that the fill materials comprise clay soils, which may result in unfavourable site classifications for individual lots and low subgrade design strengths for pavements.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential. Assessments of these design parameters are beyond the scope of this report.

Controlled fill (Level 1 Fill) provides an overview that the Earthwork Specification has been met. There are instances where significant long-term settlements of controlled fill can occur. Large total and differential settlements can be expected where fill has been placed over soft and compressible soils and where the thickness of controlled fill varies significantly across a lot.

Should you require further information regarding the above, please do not hesitate to contact this office.

Yours faithfully,



MICHAEL MORRISON
For and on behalf of
QUALTEST LABORATORY PTY LTD.



DENNIS ALAZIGHA, RPEQ 22169

Appendix A - The Location of Compaction Tests and Area of Fill Covered.

Appendix B - Compaction Test Reports



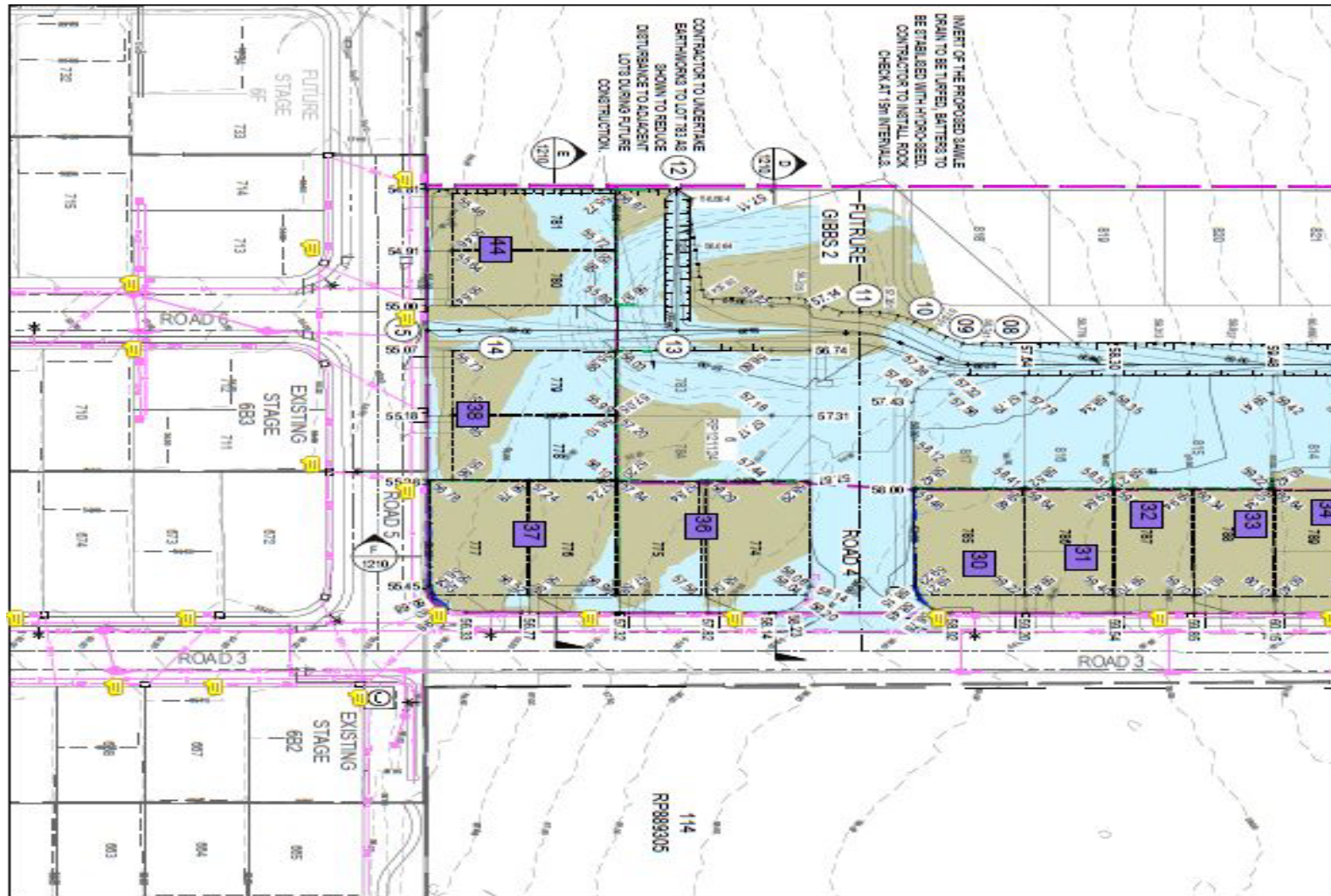
APPENDIX A

Site Plan and Compaction Test Locations



Qualtest Laboratory

Est. 1987



LEGEND:

Test Locations



CLIENT: Winslow Pty Ltd

LOCATION: Dawn Estate Gibbs Stage 1

TITLE: The Location of Compaction Tests and Area of Fill Covered.

DRAWING NO: 23-293-02

DATE: 26th October 2023

PROJECT NO: 23-293

CHECKED BY: GG

A photograph of a construction site. In the foreground, there is a dirt road with tire tracks. To the right, a white pickup truck is parked, featuring a logo for 'Qualtest Laboratory' on its side. In the background, several excavators are working on a large pile of earth, and a row of modern houses with solar panels is visible under a clear sky.

APPENDIX B

COMPACTION TEST REPORTS

Material Test Report

Report Number: 23-293-1
Issue Number: 1
Date Issued: 20/07/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 6537
Date Sampled: 10/07/2023
Dates Tested: 10/07/2023 - 13/07/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Stage 1 Gibbs, Walloon
Material: General Fill
Material Source: On-Site



Qualtest Laboratory Pty Ltd
 Brisbane Laboratory
 2 / 40 Boyland Ave Cooper Plains QLD 4108
 Phone: 0417 011 515
 Email: rhys@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6537A		
Test Number	1		
Date Tested	10/07/2023		
Time Tested	12:30		
Test Request #/Location	Basin Backfill		
Easting	465639		
Northing	6943421		
Layer / Reduced Level	Finish Level		
Soil Description	Silty CLAY		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	1.99		
Field Moisture Content %	11.4		
Field Dry Density (FDD) t/m ³	1.79		
Peak Converted Wet Density t/m ³	1.94		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	3.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	102.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 23-293-2
Issue Number: 1
Date Issued: 20/07/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 6538
Date Sampled: 10/07/2023
Dates Tested: 10/07/2023 - 13/07/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Stage 1 Gibbs, Walloon,
Material: General Fill
Material Source: On - Site



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 Brisbane Laboratory
 2 / 40 Boyland Ave Cooper Plains QLD 4108
 Phone: 0417 011 515
 Email: rhys@qualtestgeo.com

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Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6538A	S6538B	
Test Number	2	3	
Date Tested	03/07/2023	03/07/2023	
Time Tested	11:45	11:50	
Test Request #/Location	General Fill	General Fill	
Easting	465646	465653	
Northing	6947414	6947425	
Layer / Reduced Level	1m Below FL	0.5m Below FL	
Thickness of Layer (mm)	175	175	
Soil Description	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	1.97	1.97	
Field Moisture Content %	10.4	10.7	
Field Dry Density (FDD) t/m ³	1.78	1.78	
Peak Converted Wet Density t/m ³	1.94	1.93	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	5.0	5.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	101.5	102.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 23-293-10
Issue Number: 1
Date Issued: 14/08/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 6832
Date Sampled: 01/08/2023
Dates Tested: 01/08/2023 - 10/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Gibbs 1, Walloon (General Fill)
Material: General Fill
Material Source: On-site



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 Brisbane Laboratory
 2 / 40 Boyland Ave Cooper Plains QLD 4108
 Phone: 0417 011 515
 Email: rhys@qualtestgeo.com

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Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S6832A	S6832B	S6832C	S6832D	S6832E	S6832F
Test Number	30	31	32	33	34	35
Date Tested	01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Time Tested	10:00	10:05	10:10	10:15	10:20	10:25
Test Request #/Location	General Fill Lot 785	General Fill Lot 786	General Fill Lot 787	General Fill Lot 788	General Fill Lot 789	General Fill Lot 790
Easting	7m Off North Boundary	5m Off North Boundary	4m Off West Boundary	7m Off West Boundary	6m Off West Boundary	8m Off East Boundary
Northing	8m Off East Boundary	9m Off East Boundary	7m Off South Boundary	3m Off North Boundary	6m Off North Boundary	5m Off South Boundary
Layer / Reduced Level	Finish Level	Finish Level	Finish Level	Finish Level	Finish Level	Finish Level
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY
Test Depth (mm)	175	175	175	175	175	175
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m ³	1.86	1.82	1.85	1.84	1.85	1.85
Field Moisture Content %	21.8	22.3	18.6	18.1	18.5	18.1
Field Dry Density (FDD) t/m ³	1.52	1.49	1.56	1.56	1.56	1.57
Peak Converted Wet Density t/m ³	1.91	1.88	1.86	1.89	1.93	1.88
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.5	0.5	1.0	0.5	2.5	3.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	97.0	97.0	99.0	97.5	96.0	98.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 23-293-11
Issue Number: 1
Date Issued: 14/08/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 6907
Date Sampled: 04/08/2023
Dates Tested: 04/08/2023 - 11/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Gibbs Stage 1, Walloon
Material: General Fill
Material Source: On-site



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 Brisbane Laboratory
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Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6907A	S6907B	S6907C
Test Number	36	37	38
Date Tested	04/08/2023	04/08/2023	04/08/2023
Time Tested	11:50	12:00	12:05
Test Request #/Location	General Fill Lot Common Boundary	General Fill Lot Common Boundary	General Fill Lot Common Boundary
Easting	774 - 775	776 - 777	778 - 779
Northing	5m Off West Common Boundary	6m Off West Common Boundary	3m Off South Common Boundary
Layer / Reduced Level	Finish Level	Finish Level	Finish Level
Thickness of Layer (mm)	200	200	200
Soil Description	Silty CLAY	Silty CLAY	Silty CLAY
Test Depth (mm)	175	175	175
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m ³	1.92	1.93	1.92
Field Moisture Content %	22.0	21.5	21.5
Field Dry Density (FDD) t/m ³	1.58	1.59	1.58
Peak Converted Wet Density t/m ³	1.96	1.92	1.92
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	0.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	98.0	100.5	100.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 23-293-12
Issue Number: 1
Date Issued: 14/08/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 6981
Date Sampled: 10/08/2023
Dates Tested: 10/08/2023 - 11/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Gibbs Stage 1, Walloon
Material: General Fill
Material Source: On-site



Qualtest Laboratory Pty Ltd
 Brisbane Laboratory
 2 / 40 Boyland Ave Cooper Plains QLD 4108
 Phone: 0417 011 515
 Email: rhys@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6981A	S6981B	
Test Number	39	40	
Date Tested	10/08/2023	10/08/2023	
Time Tested	10:00	10:10	
Test Request #/Location	General Fill Lot	General Fill Lot	
Easting	Common Lot Boundary 798-799	Common Lot Boundary 791-792	
Northing	4m Off East Common Bounadry	6m Off East Common Lot Boundary	
Layer / Reduced Level	Finish Level	Finish Level	
Thickness of Layer (mm)	200	200	
Soil Description	Silty CLAY	Silty CLAY	
Test Depth (mm)	175	175	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	1.92	1.94	
Field Moisture Content %	14.1	14.1	
Field Dry Density (FDD) t/m ³	1.69	1.70	
Peak Converted Wet Density t/m ³	1.85	1.91	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	5.0	5.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	104.0	101.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 23-293-15
Issue Number: 1
Date Issued: 17/08/2023
Client: WINSLOW PTY LTD
 1587 IPSWICH ROAD, ROCKLEA QLD 4106
Contact: HAYDN LANE
Project Number: 23-293
Project Name: LEVEL 1 & LEVEL 2 TESTING
Project Location: DAWN ESTATE - GIBBS STAGE 1
Client Reference: 55297
Work Request: 7025
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 16/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Dawn Gibbs Stage 1, Walloon
Material: General Fill
Material Source: On-site



Qualtest Laboratory Pty Ltd
 Brisbane Laboratory
 2 / 40 Boyland Ave Cooper Plains QLD 4108
 Phone: 0417 011 515
 Email: greg@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Greg Gibson
ql-greg

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S7025A		
Test Number	44		
Date Tested	16/08/2023		
Time Tested	10:00		
Test Request #/Location	General Fill Common Lot Boundary		
Easting	780-781		
Northing	6m Off South Common Lot Boundary		
Layer / Reduced Level	Finish Level		
Thickness of Layer (mm)	200		
Soil Description	Silty CLAY		
Test Depth (mm)	175		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	1.88		
Field Moisture Content %	11.0		
Field Dry Density (FDD) t/m ³	1.70		
Peak Converted Wet Density t/m ³	1.91		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	98.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC